Content Domains

Automation and Robotics 48.500.20

Domain 4
Machining
5-10% Instructional time

Domain 3
Fundamentals
20-30% Instructional time

Domain 2
Technical Skills
30-40% Instructional time

Domain 1
Robotics Application
45-55% Instructional time
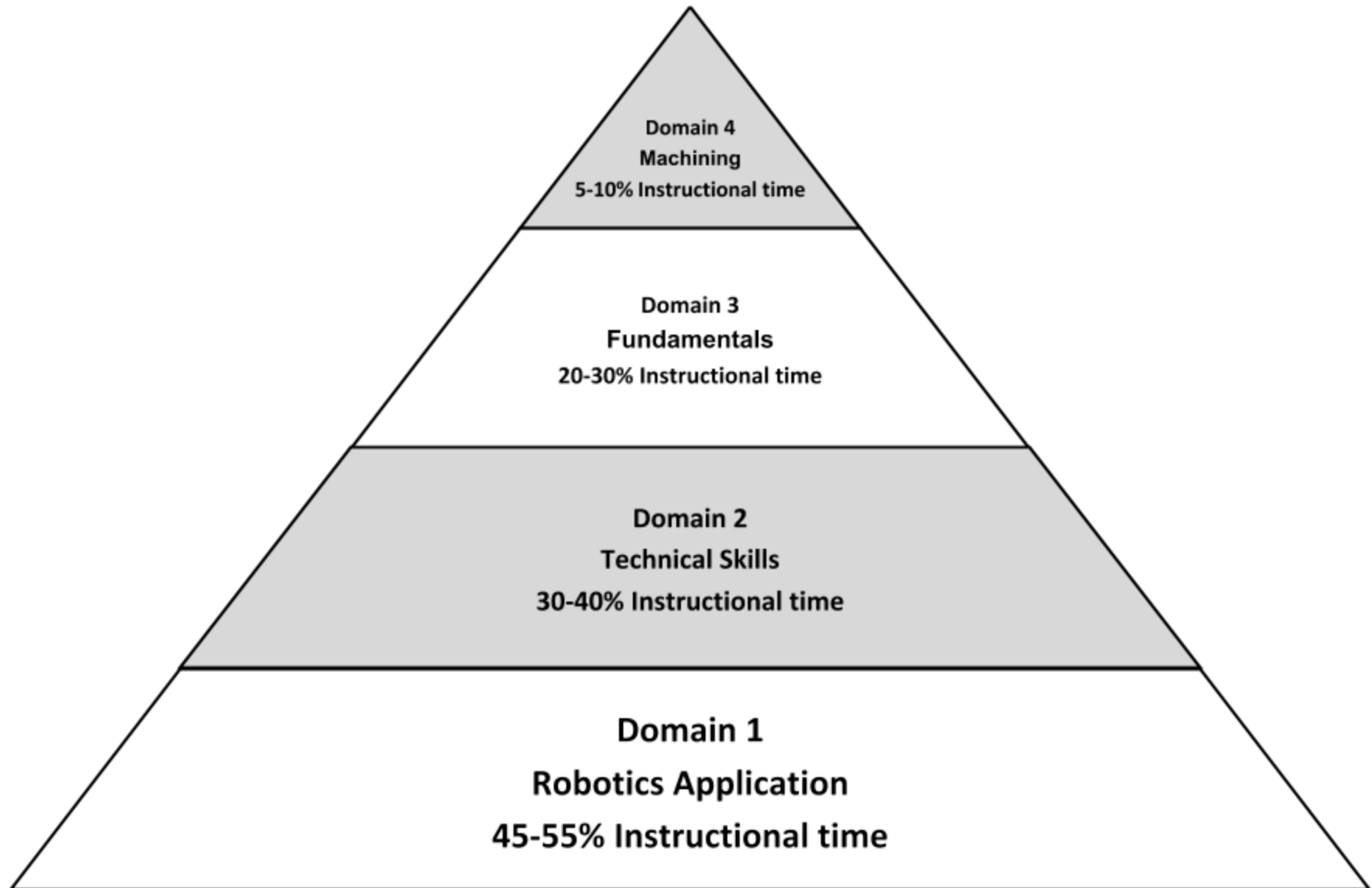
The technical standards for the Automation and Robotics are clustered in 4 domains. The greatest percentage of instructional time will be spent on domains 1 and 2 with less time on domains 3 and 4. Students who complete the program should demonstrate a thorough knowledge in each of these domains.

ARIZONA**CTE**
CURRICULUM CONSORTIUM

AZ
PROGRAMS
OF STUDY

Content Domains, Standards and Instruction

Automation and Robotics
48.0500.20

Domain	Related Standards	Instructional Time
Domain 1 Robotic Applications	STANDARD 1.0 PERFORM ELECTRICAL AND ELECTRONIC TASKS STANDARD 2.0 PERFORM HYDRAULIC AND/OR PNEUMATIC TASKS STANDARD 3.0 PERFORM PROGRAMMABLE LOGIC CONTROLLER (PLC) TASKS STANDARD 5.0 PERFORM MECHANICAL LINKAGES SYSTEM TASKS STANDARD 7.0 PERFORM INDUSTRIAL ROBOTIC TASKS STANDARD 10.0 PERFORM SENSOR AND CONTROL SYSTEMS TASKS	**45-55%**
Domain 2 Technical Skills	STANDARD 4.0 DESCRIBE THE OPERATION AND USE OF VARIOUS FORMS OF ELECTRICAL MOTORS IN ROBOTIC ASSEMBLIES STANDARD 9.0 DEMONSTRATE AN UNDERSTANDING DATA COMMUNICATIONS METHODOLOGIES STANDARD 11.0 DEVELOP ROBOTICS SOFTWARE	**30-40%**
Domain 3 Fundamentals	STANDARD 12.0 APPLY THE ENGINEERING DESIGN PROCESS TO ROBOTICS DEVELOPMENT STANDARD 13.0 EXAMINE THE ETHICAL IMPACT OF ROBOTICS STANDARD 14.0 DEMONSTRATE SAFE AND PROPER USE OF ELECTRONIC AND OTHER LABORATORY EQUIPMENT, TOOLS, AND MATERIALS	**20-30%**
Domain 4 Machining	STANDARD 6.0 PERFORM DRAFTING TASKS STANDARD 8.0 PERFORM CNC TASKS	**5-10%**

Content domains are bodies of knowledge, skills or abilities to be taught or assessed. They are clustered as related to technical standards for instruction. The suggested percentage of instructional time is listed for each domain. Instructional time corresponds to the percentage of assessment items included on the Technical Skills Assessment 2017